Sending Alarm Codes to a Numeric Pager with the SLM SiteLync

SLM Technical Note TN 033

Introduction

Normally, a LonWorks remote monitoring application will utilize a MMI (Man-Machine Interface) to report the status of sensors and nodes. However, some monitoring applications require that an alarm condition at an unmanned remote site be transmitted to a numeric pager. In some of these cases, it is useful to only identify the remote location with a numeric code. In other words, any alarm at Site #234 would display the message "234" on the pager. We will refer to this as "Paging to Identify Alarm Location". In other cases, it is useful to identify the particular alarm at a remote site; a 'high temperature' alarm at Site #234 may be more critical than a 'high humidity' alarm at Site #567. This capability requires the use of a LonPoint DI-10 Digital Input Module reprogrammed as an "Alarm Dialer". This application is described completely in Echelon document #005-0134-01A (Alarm Dialer User's Guide).

Additional Resources

More information can be found in the following documents:

- SLM SiteLync User Guide, CTI #S2-60898
- SLTA-10 Adapter User Guide, Echelon #078-0160-01B
- Alarm Dialer User's Guide, Echelon #005-0134-01A

Paging to Identify Alarm Location

When only the remote location of an alarm must be displayed on a numeric pager, an SLM SiteLync is all that needs to be added to the remote LonWorks network. Using SLTALink Manager, the SLM SiteLync is first configured with the phone number to dial, a numeric code to designate the remote location, and then enabling Auto-Dialout. A network management tool, such as LonMaker for Windows, is then used to make a network variable (NV) binding between a node that senses alarm conditions and the SLM SiteLync. When the NV is updated, the SLM SiteLync dials the number, pauses a specified number of seconds for the paging system to answer, then sends the remote location identifier. If the SLM SiteLync's 'hangup timer' is configured for a duration of 1 minute, then another alarm can be reported after that time.

This section describes the steps necessary to enable an SLM SiteLync to send remote location information for an alarm to a numeric pager. The setup for this capability can be divided into four areas:

1. SLM SiteLync physical installation at remote site
2. SLM SiteLync configuration
3. NV binding creation
4. Testing the system

It is assumed that the following has been installed on the host PC:

- ✓ SLM/Config Utility and SLTALink Manager: See **STEP 1. INSTALLING THE SOFTWARE DRIVERS**, of the "SETUP AND OPERATION" section of the SLM SiteLync User Guide for more information.
- ✓ LonMaker for Windows

It is also assumed that configuration will take place at the remote site, and the host PC will be attached directly to the SLM SiteLync's 'SETUP' port. The host PC can be disconnected and removed after configuration is complete. Remote setup is also possible.

CTI Products, Inc.
Phone: +1.513.595.5900
Fax: +1.513.595.5983
1211 W. Sharon Road, Cincinnati, OH 45240
Email: info@ctiproducts.com
Web: www.ctiproducts.com

1. SLM SiteLync Physical Installation at Remote Site

Following mounting of the unit, make connections to the SLM SiteLync for the phone line, LonWorks network, and power.

2. SLM SiteLync Configuration

Use SLTALink Manager to establish a new local link with an SLM SiteLync:

Connect a standard (straight-through, 9-pin male to 9-pin female) serial cable from the proper serial port on the host PC to the SETUP connector on the SLM SiteLync. See APPENDIX E of the SLM SiteLync User Guide for connection details.

For this configuration step, the RUN/CFG switch must be in the CFG position. Following any change to switch settings, be sure to power-cycle or RESET the SLM SiteLync.

To establish a new local link with an SLM SiteLync using SLTALink Manager, use the following steps:

a. From the **Link** menu, choose **New**.
b. In the "Link Description" window, specify a Name, click the Local button, then click the Next button.
c. In the "Comm Port" window, specify the serial port to which the SLM SiteLync will be connected, select a baud rate of 57600, then click the Next button.
d. In the "Link Properties" window, accept the default field values by clicking the Finish button.
e. From the **Link** menu, choose **Select** and select the link just configured from the list.
f. Manually connect to the local SLM by clicking the "Link" button shown here: . Connection status will be indicated in the main window. If successful, the "Remote Identifier" will be shown.

Use SLM/Config Utility to Configure the SLM SiteLync:

> ***Note:*** The SLM/Config utility is similar to the **Configure SLTA** selection in the **Devices** menu of SLTALink Manager. Although either program may be used to configure the SLM SiteLync (in NSI mode), the SLM/Config utility eases the task of determining the modem initialization string, allows the configuration choices to be saved to and retrieved from a disk file, and can be used with the SLM SiteLync in either NSI or MIP mode.

a. Shut down any host applications (i.e. LonMaker, Nodeutil, etc.) before attempting to run the SLM/Config utility.
b. From the Windows START menu, choose **PROGRAMS**, then **CTI PRODUCTS**, then **SLM CONFIG**. The "SLM/Config" window will be displayed.
c. From the "SLM/Config" window's **File** menu, select **Upload from Connected SLM SiteLync**. The modem configuration window will be displayed.
d. Leave the "Enable Callback" feature unchecked for this example.
e. Since the SLM SiteLync will control the termination of the connection, specify a "Hangup Timer" value of 1 minute. The SLM SiteLync will hang-up and break a connection when the time specified has elapsed and no uplink or downlink activity has occurred.
f. The "Guard Time" parameter controls the length of time that the SLM will wait before attempting to dial the next "Dial Directory" number. The "Guard Time" value of 45 seconds is satisfactory.
g. In the "Modem Options" box, enable "Auto Answer" by clicking the box so a check mark appears as follows: ☑. Enabling "Auto Answer" will allow a host PC to call into this SLM SiteLync for remote monitoring and maintenance functions.

h. The "Dial Directories" box contains phone numbers to access other locations when the "auto dial-out" feature is used. In the first dial directory, enter the pager phone number, followed by delay (comma) characters, and finally a location identifier. An example Dial Directory string could be:

9#5554444,,,,234

where:

9#	is the outside line access characters
5554444	is the pager phone number
,,,,	is the delay before remote location code is sent
234	is the remote location code that will be displayed on the pager

Four additional "Dial Directory" strings may be entered to provide alternate connection possibilities in case the first pager number can not be reached by the SLM SiteLync. For this example, only one dial directory will be used.
The comma character represents either 2 or 4 seconds of delay, specified by the modem's s-register S8. The default S8 value for the SLM SiteLync with a US compatible modem is 2 seconds. The default S8 value for the SLM SiteLync with an EU compatible modem is 4 seconds. When determining the proper amount of delay to wait for the paging system to answer, it is helpful to attach an audio amplifier to the telephone line near the SLM SiteLync so that dialing and connection tones can be heard.

i. In the "Auto Dial-out Configuration" box, enable the "NV Connect" feature. The two drop-down boxes contain the range of dial directories to be used. For this example, both boxes should be set to "1", since only the first dial directory will be used.

j. Click the Apply button to download parameters to the SLM SiteLync. An "Information" window will be displayed to indicate that the download is complete. Click OK to clear this window.

k. To exit the SLM/Config utility, click the OK button on the modem configuration window. When a prompt appears to "Save Changes?", you may save parameters to a configuration text file with an extension of *.slm*.

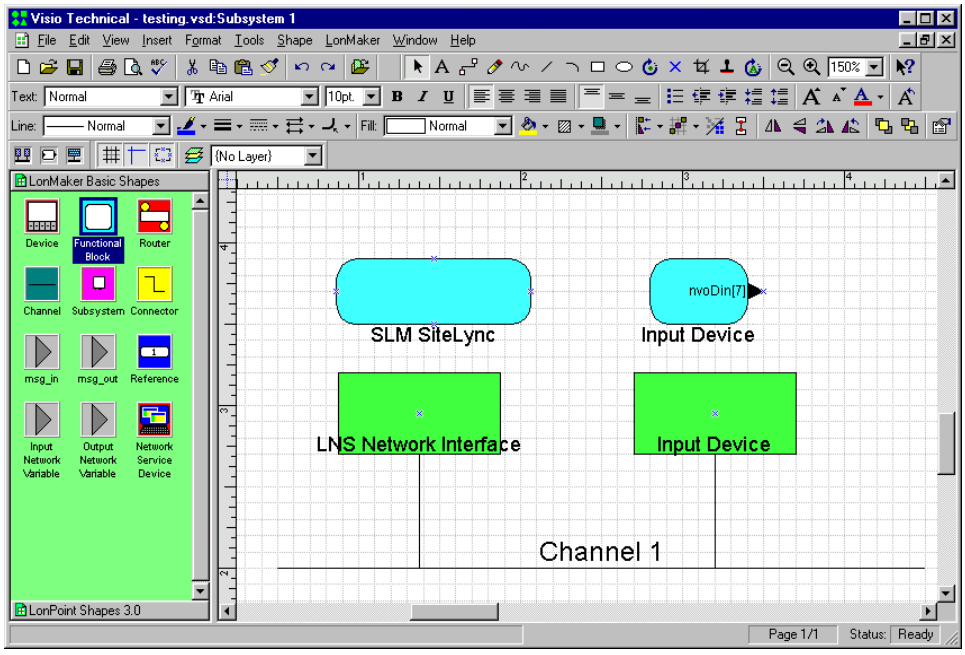
3. NV Binding

This example will use LonMaker for Windows to create the NV binding. The drawing will include only the LNS Network Interface (a remote SLM SiteLync) and a LonWorks input device that monitors a pushbutton. A network variable binding will be made between the input device for the pushbutton and the network interface. The pushbutton (and the network variable that monitors its state) will simulate an alarm network variable causing the Auto-Dialout event to the pager.

Create the LonMaker for Windows Drawing:

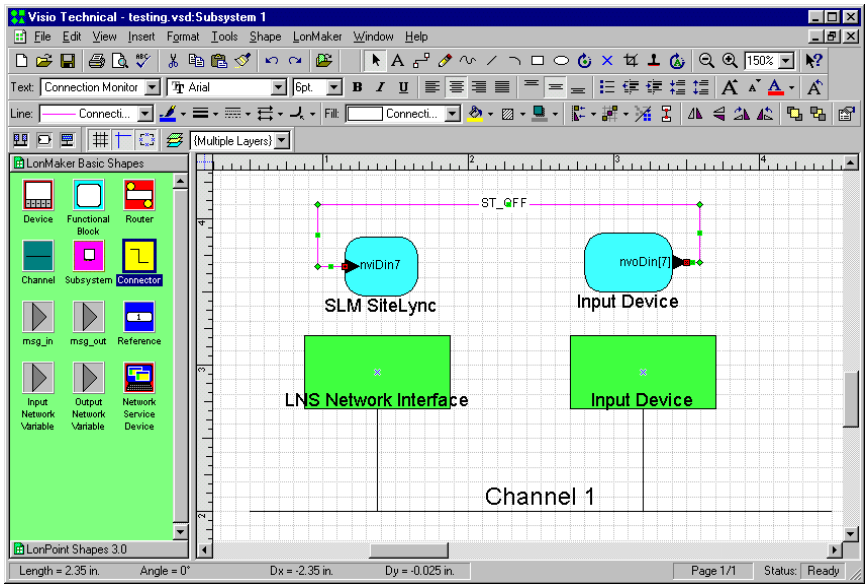
a. After the LonMaker for Windows tool is started, the "Network Wizard" window will allow selection of the "Network Interface". Select "Network Attached" and specify "SLTALON1" as the Network Interface Name.

b. Add the input device to the drawing, then add a functional block for both the LNS Network Interface and the Input Device. Finally, add an Output Network Variable (nvo) to the Input device that will monitor the pushbutton. The resultant drawing is shown below.



c. Add an Input Network Variable (nvi) to the LNS Network Interface. Start by dragging the Input Network Variable shape from the LonMaker stencil to the SLM SiteLync functional block. The "Choose a Network Variable" window will appear. Click the Create NV button to bring up the "Create Network Variable" window. Click the Browse button to bring up the "Select Object" window. Expand Subsystem 1, then expand Input Device, select the output network variable that is used to monitor the pushbutton, then click the OK button. Exit the "Create Network Variable" window by clicking the OK button. Exit the "Choose a Network Variable" window by clicking the OK button.

d. Logically connect the nvi on the SLM SiteLync functional block to the nvo on the Input Device, by dragging a connector shape to the drawing, and dragging the ends to the variable connection points. The completed drawing appears below.



e. Manually disconnect from the local SLM SiteLync by clicking the "Disconnect" button in SLTALink Manager.

f. Set the RUN/CFG switch on the SLM SiteLync to the RUN position, then press the RESET button.

4. Testing the System

To determine if the system is working correctly, it is helpful to attach an audio amplifier to the telephone line near the SLM SiteLync so that dialing and connection tones can be heard. When an alarm condition occurs, the following sequence of events should be heard with the amplifier:

a. SLM SiteLync issues dial tones representing the outside line access and pager number

b. paging system ring

c. paging system issues tone(s) to signal user to enter numbers

d. SLM SiteLync issues dial tones representing the remote location

Configuration is now complete and the host PC running LonMaker for Windows may be disconnected and removed.